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August 24, 2011

VIA ELECTRONIC FILING
Jocelyn Boyd, Esquire
Chief Clerk and Administrator
South Carolina Public Service Commission
101 Executive Center Drive
Columbia, SC 29210

RE: Application of Carolina Water Service, Inc. for adjustment of Rates and Charges and Modification of Certain Terms and Conditions for the Provision of Water and Sewer Service
DOCKET NO.: 2011-47-WS

Dear Ms. Boyd:

Enclosed please find the prefiled **Rebuttal Testimony of Pauline M. Ahern with one exhibit** filed on behalf of Carolina Water Service, Inc. in the above referenced docket. By copy of this letter, I am serving all parties of record.

If you have any questions or if I may provide you with any additional information, please do not hesitate to contact me.

Sincerely,

Elliott & Elliott, P.A.

Scott Elliott

SE/mlw
Enclosures
cc: Parties of Record w/enc.

Carolina Water Service, Inc.
Docket No. 2011-47-WS

BEFORE THE

PUBLIC SERVICE COMMISSION OF SOUTH CAROLINA

PREPARED REBUTTAL TESTIMONY

OF

PAULINE M. AHERN, CRRA
PRINCIPAL
AUS CONSULTANTS

ON BEHALF OF

CAROLINA WATER SERVICE, INC.

CONCERNING

FAIR RATE OF RETURN

AUGUST 2011

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Introduction

Q. Please state your name, occupation and business address.

A. My name is Pauline M. Ahern and I am a Principal of AUS Consultants. My business address is 155 Gaither Drive, Suite A, Mt. Laurel, New Jersey 08054.

Q. Are you the same Pauline M. Ahern who previously submitted prepared direct testimony in this proceeding?

A. Yes, I am.

Q. Have you prepared an exhibit which supports your rebuttal testimony?

A. Yes, I have. It has been marked for identification as Exhibit No. __ and consists of Schedules PMA-15 through PMA-21.

Purpose

Q. What is the purpose of this testimony?

A. The purpose of this testimony is to rebut certain aspects of the direct testimony of Douglas H. Carlisle, witness for the Office of the Regulatory Staff (ORS). Specifically, I will address Dr. Carlisle's use of multiple proxies for growth in his Discounted Cash Flow Model (DCF); his application of the Capital Asset Pricing Model (CAPM); his application of the Comparable Earnings Model; and his failure to reflect the risk of Carolina Water Service, Inc. (CWS or the Company) capital structure and small size in his common equity cost rate recommendation.

Discounted Cash Flow Model (DCF)

Q. On page 11, lines 4-16 of his direct testimony, Dr. Carlisle discusses his use of various measures of growth in his DCF. Please comment.

A. Dr. Carlisle used historical and projected measures of growth in earnings per share (EPS),

sales/revenue dividends per share (DPS) and book value per share (BVPS). As discussed in my prepared direct testimony at page 28, line 9 through page 31, line 19, it is appropriate to rely exclusively upon security analysts forecasted growth rates in EPS.

The DCF model utilized by Dr. Carlisle is market-based since market prices are employed in its application. Therefore, it is based upon the Efficient Market Hypothesis (EMH) which is the foundation of modern investment theory. The EMH was pioneered by Eugene F. Fama[1] in 1970. As discussed in my prepared direct testimony on pages 24-25, an efficient market is one in which security prices reflect all relevant information all the time. This implies that prices adjust instantaneously to new information, thus reflecting the intrinsic fundamental economic value of a security.[2]

The three forms of the EMH are:

A. The "weak" form which asserts that all past market prices and data are fully reflected in securities prices, i.e., technical analysis cannot enable an investor to "outperform the market".

B. The "semistrong" form which asserts that all publicly available information is fully reflected in securities prices, i.e., fundamental analysis cannot enable an investor to "outperform the market".

C. The "strong" form which asserts that all information, both public and private, is fully reflected in securities prices, i.e., even insider information cannot enable an investor to "outperform the market".

The "semistrong" form of the EMH is generally held to be true because the use of insider information often enables investors to "outperform the market" and earn excessive returns. The generally-accepted "semistrong" form of the EMH means that all perceived

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[1] Eugene F. Fama, "Efficient Capital Markets: A Review of Theory and Empirical Work" (Journal of Finance, May 1970) 383-417.

[2] Eugene F. Brigham, Fundamentals of Financial Management, Fifth Edition (The Dryden Press, 1989) 225.

risks are taken into account by investors in the prices they pay for securities. Investors are aware of all publicly-available information, including bond ratings; discussions about companies by bond rating agencies and investment analysts; as well as the various securities analysts forecast of growth in EPS and academic/empirical literature which supports their use in a DCF. This means that it is appropriate to rely upon such growth rates in a DCF analysis.

Q. Please discuss the academic/empirical literature which supports the use of security analysts' forecasts of growth in EPS.

A. Earnings expectations have a significant influence on market prices and the "appreciation" or "growth" experienced by investors. Morin notes[3]:

> Because of the dominance of institutional investors and their influence on individual investors, analysts' forecasts of long-run growth rates provide a sound basis for estimating required returns. Financial analysts exert a strong influence on the expectations of many investors who do not possess the resources to make their own forecasts, that is, they are a cause of g. The accuracy of these forecasts in the sense of whether they turn out to be correct is not at issue here, as long as they reflect widely held expectations. As long as the forecasts are typical and/or influential in that they are consistent with current stock price levels, they are relevant. The use of analysts' forecasts in the DCF model is sometimes denounced on the grounds that it is difficult to forecast earnings and dividends for only one year, let alone for longer time periods. This objection is unfounded, however, because it is present investor expectations that are being priced; it is the consensus forecast that is embedded in price and therefore in required return, and not the future as it will turn out to be.
>
> * * *
>
> Published studies in the academic literature demonstrate that growth forecasts made by security analysts represent an appropriate source of DCF growth rates, are reasonable indicators of investor expectations and are more accurate than forecasts based on historical growth. These studies show that investors rely on analysts' forecasts to a greater extent than on historic data only.

[3] Roger A. Morin, New Regulatory Finance (Public Utilities Reports, Inc., 2006) 298.

In addition, my direct testimony provides support on pages 29-31 for the use of analysts' forecasts of earnings growth in a DCF model from Myron Gordon, the "father" of the standard regulatory version of the DCF model utilized by both Dr. Carlisle and myself in this proceeding. Also cited on page 30 of my direct testimony, were studies performed by Cragg and Malkiel[4] which demonstrate that analysts' forecasts are superior to historical growth rate extrapolations. As noted on pages 30 and 31 of my direct testimony, while some question the accuracy of analysts' forecasts of EPS growth, it does not really matter what the level of accuracy of those analysts' forecasts is well after the fact. What is important is that they influence investors and hence the market prices they pay.

Moreover, there is no empirical evidence that investors, consistent with the EMH, would discount or disregard analysts' estimates of growth in earnings per share. "Do Analyst Conflicts Matter? Evidence From Stock Recommendations"[5] provided in Schedule PMA-15 examined whether conflicts of interest with investment banking [IB] and brokerage businesses induced sell-side analysts to issue optimistic stock recommendations and whether investors were misled by such biases. They conclude on page 1 of Schedule PMA-15:

> Overall, our findings do not support the view that conflicted analysts are able to systematically mislead investors with optimistic stock

[4] John G. Cragg and Burton G. Malkiel, Expectations and the Structure of Share Prices (University of Chicago Press, 1982) Chapter 2.

[5] Agrawal, Anup and Chen, Mark A., "Do Analysts' Conflicts Matter? Evidence from Stock Recommendations", (Journal of Law and Economics, August 2008), Vol. 51.

recommendations.

On page 29 of Schedule PMA-15, Agrawal and Anup state:

> Overall, our empirical findings suggest that while analysts do respond to IB and brokerage conflicts by inflating their stock recommendations, the market discounts these recommendations after taking analysts' conflicts into account. These findings are reminiscent of the story of the nail soup told by Brealey and Myers (1991), except that here analysts (rather than accountants) are the ones who put the nail in the soup and investors (rather than analysts) are the ones to take it out. Our finding that the market is not fooled by biases stemming from conflicts of interest echoes similar findings in the literature on conflicts of interest in universal banking (for example, Kroszner and Rajan, 1994, 1997; Gompers and Lerner 1999) and on bias in the financial media (for examples, Bhattacharya et al. forthcoming; Reuter and Zitzewitz 2006). Finally, while we cannot rule out the possibility that some investors may have been naïve, our findings do not support the notion that the marginal investor was systematically misled over the last decade by analysts' recommendations.

As discussed above, the "semistrong" form of the EMH is generally held to be true where all perceived risks are taken into account by investors in the prices they pay for securities and investors are aware of all publicly-available information, including the many analysts earnings growth forecasts available. Investors are also aware of the accuracy of past forecasts, whether for earnings or dividends growth or for interest rates. Investors have no prior knowledge of the accuracy of any forecasts available at the time they make their investment decisions, as that accuracy only becomes known after some future period of time has elapsed.

Therefore, consistent with the EMH upon which the DCF model utilized by both Dr. Carlisle and myself are predicated, since investors have such analysts earnings growth rate projections available to them and investors are aware of the accuracy of such projections, analysts earnings projections should receive significant, if not exclusive

weight in a cost of common equity analysis. Dr. Carlisle would like us to ignore reality by disregarding the largest influence on individual investors who own approximately 54% on average (see Schedule PMA-7 of Exhibit No. _), of all the common stock shares of the companies in my proxy groups. Rate of return analysts, such as Dr. Carlisle and myself who attempt to emulate investor behavior, should not ignore this reality.

Q. What would Dr. Carlisle's DCF result have been had he correctly relied upon security analysts' forecasted growth in EPS?

A. Using the average dividend yield for his proxy group 3.27% (from page 1 of Exhibit DHC-2) and an average security analysts' forecasted growth in EPS of 7.33% (from page 3 of Exhibit DHC-3), a DCF derived common equity cost rate of 10.72% results.[6]

Capital Asset Pricing Model (CAPM)

Q. Please comment upon Dr. Carlisle's CAPM.

A. Dr. Carlisle's CAPM analysis is flawed because he has incorrectly utilized geometric mean historic total market returns in developing his market equity risk premium and he did not include an Empirical CAPM (ECAPM) analysis.

Q. Why are the geometric mean historical returns inappropriate when estimating the cost of capital?

A. As discussed in my direct testimony at page 36, line 28 through page 38, line 22 and shown on pages 1-3 of Schedule PMA-9 of Exhibit No. __, it is the arithmetic mean return which is appropriate for cost of capital purposes precisely because it captures the effect of changing economic conditions on risk premiums over time. Investors gain

[6] 10.72% = (3.27% * (1 + (7.33%/2)) + 7.33%).

insight into relative riskiness by analyzing future variability. Because historical total returns and equity risk premium spreads differ in size and direction over time, the arithmetic mean provides insight into the variance and standard deviation of returns. The prospect for variance, i.e., standard deviation, captured in the arithmetic mean, provides the valuable insight needed by investors and rate of return analysts alike to estimate the expected risk of stocks. Absent such insight, investors cannot meaningfully evaluate prospective risk.

The financial literature is quite clear that risk is measured by the variability of expected returns, i.e., the probability distribution of returns. As noted on pages 53-61 of SBBI-2011 (SBBI), and shown in Schedule PMA-16, the arithmetic mean calculated over a very long period of time is the correct mean to use when estimating the cost of capital.

Weston and Brigham[7] provide the standard financial textbook definition of the riskiness of an asset when they state:

> The riskiness of an asset is defined in terms of the likely variability of future returns from the asset. (emphasis added)

And Morin[8] states :

> The geometric mean answers the question of what constant return you would have to achieve in each year to have your investment growth match the return achieved by the stock market. The arithmetic mean answers the question of what growth rate is the best estimate of the future amount of money that will be produced by continually reinvesting in the stock market. It is the rate of return which, compounded over multiple periods, gives the mean of the probability distribution of ending wealth. (emphasis added)

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7 J. Fred Weston and Eugene F. Brigham, Essentials of Managerial Finance, 3rd Ed. (The Dryden Press, 1974) 272.

8 Morin 133.

In addition, Brealey and Myers[9] note:

> The proper uses of arithmetic and compound rates of return from past investments are often misunderstood. . . . Thus the arithmetic average of the returns correctly measures the opportunity cost of capital for investments. . . . *Moral*: If the cost of capital is estimated from historical returns or risk premiums, use arithmetic averages, not compound annual rates of return. (italics in original)

As noted above, investors gain insight into relative riskiness by analyzing expected future variability. This is accomplished by the use of the arithmetic mean of a distribution of returns/premiums because it takes into account all of the returns / premiums, hence, providing meaningful insight into the variance and standard deviation of those returns / premiums.

As SBBI - 2011 states[10]:

> The equity risk premium data presented in this book are arithmetic average risk premiums as opposed to geometric average risk premiums. The arithmetic average equity risk premium can be demonstrated to be most appropriate when discounting future cash flows. For use as the expected equity risk premium in either the CAPM or the building block approach, the arithmetic mean or the simple difference of the arithmetic means of stock market returns and riskless rates is the relevant number. This is because both the CAPM and the building block approach are additive models, in which the cost of capital is the sum of its parts. The geometric average is more appropriate for reporting past performance, since it represents the compound average return.
>
> The argument for using the arithmetic average is quite straightforward. In looking at projected cash flows, the equity risk premium that should be employed is the equity risk premium that is expected to actually be incurred over the future time periods. Graph 5-2 shows the realized equity risk premium for each year based on the returns of the S&P 500 and the income return on long-term government bonds. (The actual, observed difference between the return on the stock market and the riskless rate is known as the realized equity risk premium.) There is

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[9] Richard A. Brealey and Stewart C. Myers, Principles of Corporate Finance (McGraw-Hill Publications, Inc., 1996) 146-147.

[10] SBBI 2011 56 (page 9 of Schedule PMA-9 of Exhibit No. 7).

considerable volatility in the year-by-year statistics. At times the realized equity risk premium is even negative.

As Ibbotson Associates[11] stated in their 1999 Yearbook:

> The expected equity risk premium should always be calculated using the arithmetic mean. The arithmetic mean is the rate of return which, when compounded over multiple periods, gives the mean of the probability distribution of ending wealth values....Stated another way, the arithmetic mean is correct because an investment with uncertain returns will have a higher expected ending wealth value than an investment which earns, with certainty, its compound or geometric rate of return every year....*Therefore, in the investment markets, where returns are described by a probability distribution, the arithmetic mean is the measure that accounts for uncertainty, and is the appropriate one for estimating discount rates and the cost of capital.* (italics added)

As discussed above, all of the cost of common equity models, including the DCF, are premised upon the EMH, that all publicly available information is reflected in the market prices paid. If investors relied upon the geometric mean of ex-post spreads, they would have no insight into the potential variance of future returns because the geometric mean relates the change over many periods to a constant rate of change, thereby obviating the year-to-year fluctuations, or variance, *critical to risk analysis*. To put it even more simply, using the geometric mean to estimate the equity risk premium is tantamount to reading the first and last page of a complete history of the Civil War and presuming to know what occurred during the Civil War. Consequently, Dr. Carlisle should have relied upon the historical arithmetic mean returns on large company stocks for each decile from 1926-2010 from SBBI – 2011 in his CAPM analysis.

Q. What is the average arithmetic mean return for the ten deciles?

A. It is 15.1% as derived on Schedule PMA-17, page 1.

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[11] Ibbotson Associates, Stocks, Bonds, Bills and Inflation - 1999 Yearbook 157-158.

Q. Dr. Carlisle did not perform an ECAPM analysis. Please comment.

A. As discussed in my direct testimony at page 43, lines 13-34, although numerous tests of the CAPM have confirmed its validity, it has been determined that the empirical Security Market Line (SML) described by the traditional CAPM is not as steeply sloped as the predicted SML. Hence, the traditional CAPM understates the cost rate for common equity for companies with betas less than 1.0 and overstates the cost rate for companies with betas greater than 1.0. Dr. Carlisle erred by not employing the ECAPM.

Q. Please explain Schedule PMA-18.

A. Schedule PMA-18 contains an excerpt from Roger A. Morin's book, New Regulatory Finance (2006) which addresses the ECAPM. As Dr. Morin indicates, empirical research shows that the traditional CAPM does not compensate for the reality that the empirical Security Market Line (SML) described by the traditional CAPM is not as steeply sloped as the predicted SML. The ECAPM process takes into account the failure of the traditional CAPM to compensate for the reality that the SML is not as steeply sloped as the predicted SML. As Dr. Morin states:

> The ECAPM and the use of adjusted betas comprise two separate features of asset pricing. Even if a company's beta is estimated accurately, the CAPM still understates the return for low-beta stocks. Even if the ECAPM is used, the return for low-beta securities is understated if the betas are understated. Referring back to Figure 6-1, the ECAPM is a return (vertical axis) adjustment and not a beta (horizontal axis) adjustment. Both adjustments are necessary.

In addition, Fama and French provide similar support for the ECAPM in their article "The Capital Asset Pricing Model: Theory and Evidence" in the *Journal of Economic Perspectives*, Summer 2004, Vol. 18 Issue 3 and provided as Schedule PMA-19. On page 8 of that schedule Fama and French note:

> The early tests firmly reject the Sharpe-Lintner version of the CAPM. There is a positive relation between beta and average return, but it is too 'flat.' . . . The regressions consistently find that the intercept is greater than the average risk-free rate . . . and the coefficient on beta is less than the average excess market return. . . This is true in the early tests . . . as well as in more recent cross-section regressions tests, like Fama and French (1992).

Finally, Fama and French note on page 9 of Schedule No. 4:

> Confirming earlier evidence, the relation between beta and average return for the ten portfolios is much flatter than the Sharpe-Linter CAPM predicts. The returns on low beta portfolios are too high, and the returns on the high beta portfolios are too low. For example, the predicted return on the portfolio with the lowest beta is 8.3 percent per year; the actual return as 11.1 percent. The predicted return on the portfolio with the t beta is 16.8 percent per year; the actual is 13.7 percent.

Clearly, then, Fama and French's paper and their review of the other academic research on the CAPM, validate the use of the ECAPM.

Q. What would Dr. Carlisle's CAPM result have been had he utilized the correctly estimated the mean historical returns as well as the ECAPM?

A. On page 2 of Schedule PMA-17, I have shown a recalculated traditional, as well as an empirical, CAPM using the correctly calculated average historical decile market returns as well as an ECAPM. As shown on Line No. 7, the traditional CAPM cost rate is 12.29%, while that of the empirical CAPM is 13.00%, shown on Line No. 12, averaging 12.65%. These properly calculated CAPM cost rates confirm that both Dr. Carlisle's CAPM result of 9.48% and his range of recommended common equity cost rate of 9.02% - 10.03% are grossly understated. In addition, the corrected CAPM cost rate misspecifies CWS's common equity cost rate because it does not reflect a downward adjustment for CWS's lower financial risk and an upward adjustment for the small relative size of CWS.

Comparable Earnings Model (CEM)

Q. Dr. Carlisle's CEM analysis utilized a group of 100 companies selected upon the basis of several criteria. Please comment.

A. Dr. Carlisle's selection criteria do not encompass measures of comparable total risk. Therefore, there is no basis to conclude that his group of 100 companies is comparable in total risk to his proxy group of water companies. His criteria, as outlined on page 15, lines 7-12 of his direct testimony, were that the companies not be in the financial sector; be followed by Value Line Investment Survey (Value Line); have betas within the range of the betas of his proxy group water companies and not exceeding that range for the past five years; and, have "indicators of growth and dividend yield and estimates." In my opinion, this is not a set of criteria that would result in a group of companies comparable in total risk to his proxy group of water companies.

The selection criteria for my CEM analysis are both market-based and based upon measures of total risk, resulting in the selection of non-regulated companies which are comparable in total risk to the proxy group of water companies. As explained in my direct testimony at page 49, line 4 through page 50, line 8, comparable betas result in companies comparable in non-diversifiable market (systematic) risk. Comparable standard errors of the regressions result in companies which are comparable in diversifiable (non-systematic) risk. Business and financial risks may vary between companies, but if the collective averages of the groups of non-price regulated companies chosen as proxies for the proxy group of water companies are similar, then the total, or aggregate, combined non-diversifiable market risks and diversifiable non-systematic risks are similar as noted in "Comparable Earnings: New Life for an Old Precept" provided in

Schedule PMA-20. *Thus, because the non-price regulated companies are selected based upon market data, they are comparable in total risk (even though individual risks may vary) to the proxy group of water companies.* It is after all, total risk which is reflected in market prices which the comparable risk, non-price regulated, companies were selected.

In view of the foregoing, Dr. Carlisle's CEM analysis is not valid for consideration by this Commission as his selection criteria do not result in a group of companies of comparable risk to the proxy group of water companies. Since Dr. Carlisle and I use the same proxy group of water companies, a more appropriate CEM analysis is the one provided in my direct testimony on pages 48-53 and presented in Schedules PMA-11 to PMA-13 which results in a more appropriate CEM result of 13.45%.

Q. What range of common equity cost rates result from these corrections?

A. Based upon a corrected DCF of 10.72%, a corrected CAPM of 12.65% and a properly applied CEM analysis of 13.45%, a range of common equity of 10.72% - 13.45% results. However, this range misspecifies the common equity cost rate for CWS as it does not reflect CWS's lower financial risk as well as CWS's greater relative risk due to its small size.

Financial Risk Adjustment

Q. Why should Dr. Carlisle have made an adjustment to reflect CWS's lower financial risk relative to his proxy group?

A. As discussed in my direct testimony at page 19, line 23 through page 20, line 3, financial risk introduces additional risk to common shareholders which must be factored into the common equity cost rate, consistent with the basic financial principle of risk and return, i.e., investors demand a higher common equity return as compensation for bearing higher

investment risk.

As noted on pages 2 and 3 of Schedule PMA-21 which is an excerpt from The Cost Of Capital – A Practitioner's Guide (2010), by David C Parcell prepared for the Society of Utility and Regulatory Analysts (SURFA) as the study manual for its Certified Rate of Return Analyst (CRRA) Program:

> A general principle of finance maintains that the financing structure of a company should be determined in conjunction with the perceived risk of the assets.
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> * * *
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> Financial risk refers to the capital structure of the firm and how this impacts the firm's after-tax net income and return on equity. Financial risk is created by the use of debt and preferred stock in the capital structure, which is called financial leverage. The use of leverage, or the use of fixed-cost financing with a (generally) lower cost than common equity, can have two impacts on a firm's return on equity. If the firms earns a return higher than the fixed-cost (i.e., leverage) capital, the firm's return on equity is enhanced. However, if the firm earns a return lower than the fixed-cost capital, the firm's return on equity is reduced. In the extreme, financial leverage can result in bankruptcy if the firm's earnings do not cover its fixed-cost rate and sufficient cash (from prior periods) is not on hand to pay the required payments to the owners of the fixed-cost capital.

Hence, adjustments to Dr. Carlisle's recommended range of common equity cost rate, 9.02% - 10.03% and the corrected range of 10.72% - 13.45% are required. Since Dr. Carlisle and I use the same proxy group of companies, a downward adjustment of 8 basis points (0.08%) is warranted as derived on page 55, line 1 through page 56, line 26. Thus, Dr. Carlisle's recommended range of common equity cost rate would be 8.94% - 9.95% on a financial risk-adjusted basis. In addition, the corrected range of 10.72% - 13.45% would be 10.64% - 13.37%. However, both of these ranges understate the cost of equity for CWS because they do not reflect the smaller size of CWS relative to Dr. Carlisle's

proxy group as discussed below.

Size Adjustment

Q. Please discuss the risk implications of CWS's small size relative to Dr. Carlisle's proxy group of water companies. Does Dr. Carlisle's recommended range of common equity cost rate of 9.02% - 10.03% or corrected range of 10.72% - 13.45% adequately reflect the risk of CWS's small size relative to the proxy group?

A. As discussed on page 18, line 13 through page 19, line 19, it is conventional wisdom, supported by actual returns over time, that smaller companies tend to be more risky, causing investors to expect greater returns as compensation for that risk, consistent with the basic financial principle of risk and return. In other words, investors demand greater returns in order to bear greater risk. Another basic financial principle is that the use of funds invested and not the source of those funds which gives rise to the risk of any investment. Hence, CWS is the regulated utility to whose jurisdictional rate base the overall cost of capital allowed by the Commission in this proceeding will be applied, the relevant risk reflected in the cost of capital must be that of CWS, including the impact of its small size on common equity cost rate.

Q. Please compare the size of CWS with that of the companies in Dr. Carlisle's proxy group.

A. Since Dr. Carlisle and I have used the same proxy group, the study of the estimated market capitalization of CWS relative to the proxy group presented on page 57, line 2 through page 58, line 21 used in Schedule PMA-14 of Exhibit No. __ is relevant. That study resulted in an upward size adjustment of 0.50% which, when added to Dr. Carlisle's financial risk-adjusted range of common equity cost rate of 8.94% - 9.95%

derived above, results in a financial and business risk-adjusted range of 9.44% - 10.45%. When 0.50% is added to the financial risk-adjusted corrected range of common equity cost rate of 10.64% - 13.37%, a financial and business risk-adjusted range of 11.14% - 13.87% results. These ranges confirm that CWS's requested range of common equity cost rate of 10.80% - 11.40% is reasonable, if not conservative.

Q. Does that conclude your rebuttal testimony?

A. Yes.